REMARKS

Claims 1-38 remain in the application. Reexamination and reconsideration of the application are respectfully requested.

Claims 1-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki (USP 6,185,040) in view of Miron (USP 7,002,696). This rejection is respectfully traversed.

Claims 1-32 are directed to systems and methods comprising a number of elements in combination. For example, representative claim 1 is directed to a transmitting system comprising a combination of elements. The claimed combination includes a processor, an integration lens, an optical fiber, and a variable reflectivity surface. The variable reflectivity surface is configured to impart a desired amplitude profile onto the output taps.

For an application like Optical CDMA it is usually highly desirable that each tap have substantially equal output intensity. A combination that provides gradient reflectivity (i.e., a surface whose reflectivity varies along its length) can achieve substantially equal output intensity at each tap while maintaining low insertion loss. Support for a combination including this feature may be found in the present application at, for example, paragraphs 0042, 0050, 0056, 0060 and 0062.

The Examiner acknowledges that Shirasaki fails to disclose or suggest a combination including a variable reflectivity surface configured to impart a desired amplitude profile onto the output taps. The Examiner relies upon Miron for such teaching. Applicants respectfully disagree.

Miron fails to disclose or suggest the use of gradient reflectivity on the output surface to impart a desired amplitude profile onto the output taps. Miron results in output taps which follow an exponential decay in intensity with tap number. There is no teaching or suggestion in Miron that each tap should have substantially equal output intensity. There is no teaching or suggestion in Miron of a combination that includes the use of gradient reflectivity on the output surface (i.e., a reflectivity surface whose reflectivity varies along its length) to impart a desired amplitude profile onto the output taps.

The Office Action asserts that a variable reflectivity surface is disclosed at column 9, lines 23-49 of Miron, which state:

> "In a preferred embodiment, the electro-optical medium 206 has two electrodes 222 and 223, connected to terminals 224 and 225, respectively. This configuration is well-known in the art as it is typical set-up in any electro-optical crystal used in laser applications. An electro-optical control voltage UEO is applied between the terminals 224 and 225 in order to adjust the refractive index n.sub.2 of electro-optical medium 206 and, by consequence, the EOPD.
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> In a preferred embodiment of the present invention, an adjustable spacer is located between the optical plates 201 and 202. The selected adjustable spacer medium adjusts the spacing between optical plates 201 and 202 while maintaining their parallel relationship with each other, Accordingly, one preferred choice for the adjustable spacer is a conventional high-accuracy piezo-ceramic actuator. As known in the art, the piezo-ceramic actuator typically comprises ceramics 226 and 227, electrodes 228 and 229 connected to a terminal 230, and electrode 231 connected to a terminal 232. A control voltage, such as a piezo-electric control voltage UPE, is applied to and between the terminals 230 and 232, in order to adjust the spacing d between the reflective layers 203 and 204 and by consequence the EOPD.
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> In another embodiment of interferometer 1, a controller (not shown), such as e.g., a computer, and a displacement sensor (also not shown), monitors and measures the gap between the reflectors (reflective layers 203 and 204) thereby providing a closed loop system."

There is no teaching or suggestion in the above-quoted passage (or elsewhere in Miron) of a system in which each tap has substantially equal output intensity. There is no teaching or suggestion in the above-quoted passage (or elsewhere in Miron) of a system having a gradient reflectivity. There is no teaching or suggestion in the above-quoted passage (or elsewhere in Miron) of a surface having variable reflectivity along its length to impart a desired amplitude profile onto output taps. Indeed, the terms "variable" or "gradient" or synonymous terms appear nowhere in the in the above-quoted passage or elsewhere in Miron.

In short, there is a complete absence of any teaching or suggestion in Miron of a system including the use of variable reflectivity on the output surface to impart a desired amplitude profile

onto the output taps. In the complete absence of such teaching, the rejection of claims 1-32 as being unpatentable over Shirasaki in view of Miron must be withdrawn.

Claims 33-38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki in view of Miron and Ranalli (USP 6,285,500). This rejection is respectfully traversed.

The fundamental deficiencies of Miron and Shirasaki are not compensated by the additional reference of Ranalli. Neither Shirasaki nor Miron nor Ranalli disclose or suggest a combination including the use of gradient reflectivity on the output surface.

Moreover, the rejection is premised on an assertion that Ranalli "teaches that it is well known to introduce a second beam to an optical system and allow the taps to interfere with a first set of delayed taps (see Figure 5)." Applicants disagree with this assertion. Applicants respectfully submit that Ranalli fails to teach or suggest interference. The beams in Ranalli are NOT interfered. Instead, the beams are switched. The beams in Ranalli may occupy nearly the same position in space, but the beams are not interfered.

The Examiner maintains that Ranalli allows the taps to interfere because the taps occupy the same position in space. Consequently, according to the Examiner, the light waves will interfere to some extent with one another.

Applicants respectfully disagree. Ranalli discloses two orthogonally polarized light beams. Orthogonally polarized light beams, as in Ranalli, do not interfere and cannot interfere (irrespective of the position occupied by the taps). Consequently, Ranalli fails to teach or suggest interference. In the complete absence of such teaching, the rejection of claims 33-38 as being unpatentable over Shirasaki in view of Miron and Ranalli must be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is

determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 509622000700.

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